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10/677,273	10/03/2003	Michel Linares	Q77862	8742

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
NGUYEN, KHOI	
ART UNIT	**PAPER NUMBER**
2196	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/677,273	LINARES, MICHEL	
	Examiner	Art Unit	
	Khoi Nguyen	2196	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/03/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 0212404.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/30/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. With regard to claim 1, the phrase "in the vicinity of", line 25 does not distinctly point out the range of the time window near to t_n.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C 103(a) as being unpatentable over Hakkarainen et al. (US PGPub No. 2003/0147532), hereafter "Hakkarainen" and in view of Furhrmann et al. (US PGPub. No. 2003/0067873), hereafter "Furhrmann".

6. With regard to claim 1, Hakkarainen discloses a secure method of exchanging information messages sent successively from a sending platform to a receiving platform, which includes:

a) An initialization sequence in which an initialization message ([0017], lines 1-2, initial decryption information reads on initialization sequence and message) containing information relating to a date t_1 ([0025], lines 7-12, start and stop time reads on date information) for sending a first information message M_1 ([0020] lines 5-6, decryption information for the first micro period reads on first information message) is exchanged between sending platform and receiving platform ([0004], line 7 reads on the message M_1 exchanged) so that sending platform and receiving platform then know the date t_1 for sending first information message M_1,(inherent in, [0017], lines 12-14, "when the decryption information may be used" reads on both platforms are anticipating the time-line of the first information message , [0021], lines3-6) and

b) An information message transmission sequence (abstract, [0004], lines 1-2) in which:

information messages are sent successively by sending platform ([0027], lines 5-7, synchronization information which is part of decryption information transmitted continuously reads on information messages and successively respectively) at given time intervals ΔT_E ([0014], lines 13-14, Fig. 2 Marco and Micro period), based on a clock specific to sending platform ([0025] lines 7-11, start and stop

time reads on clock specific to sending platform), so that first message M_1 is sent at date t_1 on clock (Fig. 5, [0023] lines 5-8, seed 20a and time t_0 reads on first message and date respectively) and the n^{th} message M_n is sent at the date t_n= t_1+(n-1). $\Delta T_E + \delta$ (Fig. 5, [0024] lines 12-17, since first micro period starts at t_1; thus subsequent micro periods, for example t_6 would be: t_6= 1+(6-1). 1 + 0 = 6; it reads on the formula of M_n), each message M_n being coded ([0020] lines 11-12, [0024] lines 11-12, encrypting any given decryption information message for each micro period using currently valid decryption information reads on message M_n being coded) by means of a dynamic code C_n specific to date t_1 of sending message ([0029] lines 11-2, encrypting information associated with the first micro period reads on C_n and because the encryption is being applied to the first micro period; it reads on specific date).

messages received by receiving platform ([0038] lines 7-11) are processed as a function of their reception date t_r based on a clock specific to receiving platform (Fig. 7 component 722, determination of the next Micro/Marco period based on synchronization information reads on date function and based on clock of the receiver) so that messages received ([0038] lines 8-11) in an observation window F_n in the vicinity of t_n (Fig. 5, Micro periods 24, Macro period 22) are decoded using a decoding sequence DC adapted to decode dynamic code C_n ([0038] lines13-15, current decryption information reads on decoding sequence corresponding to the current micro period which inline with C_n), clock of receiving

platform being synchronized to date t_1 ([0042] lines 11-13, receiving synchronization information of updated decryption information reads on the clock being synchronized) on receiving first message M_1 ([0017], lines 1-2, initial decryption information reads on initialization sequence and message).

However, Hakkarainen does not disclose a given time interval ΔT_E with a sending time tolerance δ.

On the other hand, Fuhrmann discloses a given time interval ΔT_E with a sending time tolerance δ (Fig. 3, tolerance windows reads on time tolerance δ, [0034] lines 4-5, local clock source tolerances reads on time tolerance δ).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to combine the teachings of Hakkarainen and Fuhrmann to prevent collision by sufficiently long "interframe gaps" (Fuhrmann, [0034], lines 7-8)

7. Claim 2 is rejected under 35 U.S.C 103(a) as being unpatentable over Hakkarainen, in view of Furhrmann, and further in view of Swensen et al (US. Pat. No. 5420883) hereafter "Swensen".

8. With regard to claim 2, Hakkarainen discloses a secure method exchanging information messages (abstract), where during initialization sequence ([0017], lines 1-2, initial decryption information reads on initialization sequence) a) a coded initialization message M_0 is sent from sending platform to receiving platform ([0017] lines 1-2, initialization decryption information reads on coded initialization message) and initialization messages M_0, M'_0 containing the information relating to date t_1 ([0025], lines 7-12, start and stop time reads on date information) for sending first information message M_1 ([0020] lines 5-6, decryption information for the first micro period reads on first information message) which then know date t_1 for sending first information message M_1,(inherent in [0017], lines 12-14, "when the decryption information may be used" reads on both platforms are anticipated the time-line of the first information message , [0021], lines3-6)

However, neither Hakkarainen nor Furhmann discloses a coded initialization message M'_0 is sent from receiving platform to sending platform, and initialization messages M_0, M'_0 being decoded by sending platform and receiving platform.

On the other hand, Swensen discloses a coded initialization message M'_0 (col. 8, lines16-17) is sent from receiving platform to sending platform (col. 10, lines 20-23).

Furthermore, Swensen discloses a coded initialization message M'_0 (col. 8, lines16-17) is sent from receiving platform to sending platform (col. 10, lines 20-23, and initialization messages M_0, M'_0 being decoded by sending platform and receiving platform (col. 8, lines16-17, it is inherent that both platform must be able to decode the encoded message to reveal true data).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to combine the teachings of Hakkarainen, Furhmann, and teaching of Swensen to provide highly reliable method of transmitting data.

9. With regard to claim 3, Hakkarainen disclose a secure method of exchanging information messages (abstract), where if the first message M_1 ([0023] lines 11-13, micro period 24a is the first window within a macro period and updated information is sent to be serviced for this micro period only reads on first message M_1) is received within an allotted time after reception of initialization message (Fig. 6 component 618, [0029] lines 10-13, first micro period is about to begin reads on allotted time after reception of the initialization message), and clock of sending platform is automatically synchronized ([0019] lines 11-14, at synchronized time reads on the automatically synchronized) to date t_1 at the moment corresponding to the end of the allotted time ([0032] lines 7-12, the next micro period about to begin indicates the current micro period is ending which

reads on the end of the allotted time, and thus, synchronization information has been sent prior to the coming micro period; it reads on date t_1 being synchronized between last micro period and current micro period).

However, neither Hakkarainen nor Furhmann discloses if the message M_1 is not received.

On the other hand, Swensen discloses if the message M_1 is not received (col. 13, lines 60-62).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to combine the teachings of Hakkarainen, Furhmann, and teaching of Swensen to provide highly reliable method of transmitting data.

10. With regard to claim 4, Hakkarainen discloses a secure method of exchanging information messages (abstract), where observation window F_n corresponds to a time window $[t_1+(n-1).\ \Delta T_E - \Delta T_F * \varepsilon,\ t_1+(n-1).\ \Delta T_E + \Delta T_F * (1-\varepsilon)]$, where ΔT_F corresponds to the width of the observation window and satisfies the equation $\Delta T_E \leq \Delta T_F$ and ε is from 0 to 1. (Fig. 5 Micro periods 24, since each Micro period has a starting and ending coordinate and the observation windows size either less than or equal to the correspond time windows; thus, for example, Micro

period 4 would have the observation windows as: [(1+(4-1). 1 – (1 * 0)) , (1 + (4-1) . 1 + (1 * (1-0)))] which yields a coordinate of (4, 5); it reads on the observation window corresponds to a time window).

11. With regard to claim 5, Hakkarainen discloses a secure method of exchanging information messages (abstract), wherein a clock synchronization signal is sent regularly by sending platform between sending messages M_n, (Fig. 6, component 616, synchronization information being carried for each micro period through a loop within a marco period reads on clock synchronization signal is sent regularly)

However, neither Hakkarainen nor Furhmann discloses a synchronization signal being used to correct the frequency or the phase of the internal clock of receiving platform dynamically in order to reduce the phase or frequency error between the internal clocks of receiving platform and sending platform.

On the other hand, Swensen discloses synchronization signal being used to correct the frequency or the phase of the internal clock of receiving platform dynamically in order to reduce the phase or frequency error between the internal clocks of receiving platform and sending platform (col. 18, lines 31-34, asynchronous and synchronous reads on synchronize signal being used to correct error of the internal clocks between sender and receiver).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to combine the teachings of Hakkarainen, Furhmann, and teaching of Swensen to provide highly reliable method of transmitting data.

12. With regard to claim 6, Hakkarainen discloses a secure method of exchanging information messages (abstract), where information messages decoded by receiving platform ([0023] lines 10-15), but neither Hakkarainen nor Fuhrmann discloses information messages decoded by receiving platform are transmitted to an information processing module.

On the other hand, Swensen discloses information messages decoded by receiving platform are transmitted to an information processing module (col. 6, lines 65-68).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to combine the teachings of Hakkarainen, Furhmann, and teaching of Swensen to provide highly reliable method of transmitting data.

13. With regard to claim 7, Hakkarainen discloses a secure method of exchanging information messages (abstract), where messages received by receiving platform during an observation window F_n ([0038] lines 11-13, current encryption information signifies that receiver is within the micro period; thus it reads on an observation windows F_n) are stored sequentially in a memory able to store only one message at a time ([0040] lines 18-20, store only some of the future decryption information reads on store only one message at a time) and only the message stored in memory at the end of observation window F_n is transmitted ([0040] lines 1-5, future decryption information reads on message stored in memory, and the fact that the service was dropped reads on the end of observation windows F_n).

However, neither Hakkarainen nor Furhmann discloses only the message stored in memory at the end of observation window F_n is transmitted to an information processing module.

On the other hand, Swensen discloses information messages decoded by receiving platform are transmitted to an information processing module (col. 6, lines 65-68).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to combine the teachings of Hakkarainen,

Furhmann, and teaching of Swensen to provide highly reliable method of transmitting data.

14. With regard to claim 8, neither Hakkarainen nor Fuhrmann discloses a secure method of exchanging information messages (abstract), where sending platform is part of a centralized control station of a rail traffic supervision and control system, receiving platform is part of a fixed installation disposed alongside a rail track, and information processing module is a control unit on board a train circulating on a track section associated with fixed installation.

On the other hand, Swensen discloses a secure method of exchanging information messages, where sending platform is part of a centralized control station of a rail traffic supervision and control system (Fig. 1 Component 80, control center reads on centralized control station), receiving platform is part of a fixed installation disposed alongside a rail track (Fig. 1 Component 76, 78, 80, 82, 84, and 86, col. 4, lines 62-64), and information processing module is a control unit on board a train circulating on a track section associated with fixed installation (Fig. 1 Component 70, 72, and 74, col. 4, lines 66-67).

It would have been obvious to one of the ordinary skill in the art at the time of the applicant's invention was made to combine the teachings of Hakkarainen,

Furhmann, and teaching of Swensen to provide highly reliable method of transmitting data.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. US Pat. No. 5924653 to Pedersen et al. (Discloses the prospect of driver less train where computer of the train controls its movements)

b. US. PGPub No. 2002/0027495 to Darby et al. (Discloses a generally-linear communication network that relaying of packet down a line of nodes).

c. US. Pat. No. 6898285 to Hutchings et al. (Discloses a system of streaming encrypted conditional access using slide window technique).

d. US. PGPub No. 2003/0137404 to Bonneau et al. (Discloses a smart card communication system with different communication protocols).

e. US. Pat. No. 6973189 to Bodin (Discloses encryption method in a mobile radio system with TDMA access).

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khoi Nguyen whose telephone number is 570-270-1251. The examiner can normally be reached on M-Fri (7:30-5:00) Fri (7:30 - 4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil E. El Hady can be reached on 571-272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KN
Khoi Nguyen